

**IN THE UNITED STATES DISTRICT COURT  
FOR THE EASTERN DISTRICT OF TEXAS  
MARSHALL DIVISION**

SYNTORR, INC.,

Plaintiff,

v.

ARTHREX, INC.,

Defendant.

C.A. No. 2:25-cv-170

**JURY TRIAL DEMANDED**

**SYNTORR, INC.'S COMPLAINT FOR PATENT INFRINGEMENT**

Plaintiff Syntorr, Inc. (“Plaintiff” or “Syntorr”) by and through undersigned counsel, makes and files this Complaint against Arthrex, Inc. (“Defendant” or “Arthrex”) and hereby alleges and demands a jury trial as follows:

**NATURE OF ACTION**

1. This civil action for patent infringement arises under the patent laws of the United States, 35 U.S.C. § 271 et seq. This action involves U.S. Patent No. 8,881,635 (the “’635 Patent”), U.S. Patent No. 11,116,498 (the “’498 Patent”), U.S. Patent No. 11,712,241 (the “’241 Patent”), U.S. Patent No. 11,806,006 (the “’006 Patent”), and U.S. Patent No. 11,849,938 (the “’938 Patent”) (collectively the “Patents-in-Suit”). *See* Ex. A (the ’635 Patent), Ex. B (the ’498 Patent), Ex. C (the ’241 Patent), Ex. D (the ’006 Patent), Ex. E (the ’938 Patent).

**PARTIES**

2. Syntorr is a corporation duly organized and existing under the laws of California, having its principal place of business at 1157 Harker Avenue, Palo Alto, California 94301.

3. Syntorr is the owner and assignee of the Patents-in-Suit.

4. Arthrex is a Delaware corporation having its principal place of business at 1370 Creekside Boulevard, Naples, Florida 34108.

### **JURISDICTION AND VENUE**

5. This Court has original subject matter jurisdiction over this action in accordance with 28 U.S.C. §§ 1331 and 1338(a) because this action arises under the patent laws of the United States, 35 U.S.C. § 101, et seq.

6. The Court has personal jurisdiction over Arthrex because Arthrex maintains a regular and established place of business in the State of Texas and in this District including at least at 401 E Front Street, Ste 144, Tyler, TX 75702, among other places in this District. Moreover, Arthrex, directly and through its subsidiaries, distributors, resellers, agents, or intermediaries, conducts business in this District by importing, making, using, offering for sale, selling, and/or advertising products that are alleged herein to infringe the Patents-in-Suit in both Texas and in this District, and by contributing to and inducing the infringement of the Patents-in-Suit by others, which constitute acts of patent infringement in the State of Texas and in this District. As a result, Arthrex has purposely placed its products into the stream of commerce with the expectation that they will be purchased and used by customers located in Texas and in this District. On information and belief, Arthrex's customers in Texas and in this District have purchased and continue to purchase and use Arthrex's products.

7. Personal jurisdiction is also proper in this District because Arthrex has consented to personal jurisdiction in this District in prior actions, including but not limited to *Smith & Nephew, Inc. v. Arthrex, Inc.*, No. 07-cv-00335-JRG-RSP (E.D. Tex.). Arthrex has also sued others in this District. *See e.g., Arthrex, Inc. v. Smith & Nephew, Inc.*, No. 15-cv-01047-RSP (E.D. Tex.); *Arthrex, Inc. v. Smith & Nephew, Inc.*, No. 15-cv-01756-RSP (E.D. Tex.); *Arthrex, Inc. v. Smith & Nephew, Inc.*, No. 14-cv-00213-JRG; *Arthrex, Inc. v. Smith & Nephew, Inc.*, No. 16-cv-01041-

RSP.

8. Venue is proper over Arthrex pursuant to 28 U.S.C. §§ 1391 and 1400(b). Arthrex is registered to do business in Texas and has appointed an agent for service of process in Texas, CT Corporation System, located at 1999 Bryan St., Ste. 900 Dallas, TX 75201. On information and belief, Arthrex has transacted business in this District and has committed acts of direct and indirect infringement by, among other things, making, using, offering to sell, selling, and/or importing products that infringe the Patents-in-Suit. Arthrex has regular and established places of business in this District located at 401 E Front Street, Ste 144, Tyler, TX 75702, among other places in this District.

9. In addition, Arthrex has hired employees in this district to perform its sales and distribution activities. Several individuals currently represent themselves as Arthrex employees within this District. According to their LinkedIn profiles, these employees are employed by Arthrex full time and are based out of Tyler, TX or Lufkin, TX. A number of these employees have been working for Arthrex, in Tyler, TX, for over a decade.

10. Further, Arthrex has multiple exclusive distributors in this District, including but not limited to Pylant Medical (“Pylant”) and MedInc of Texas (“MedInc”).

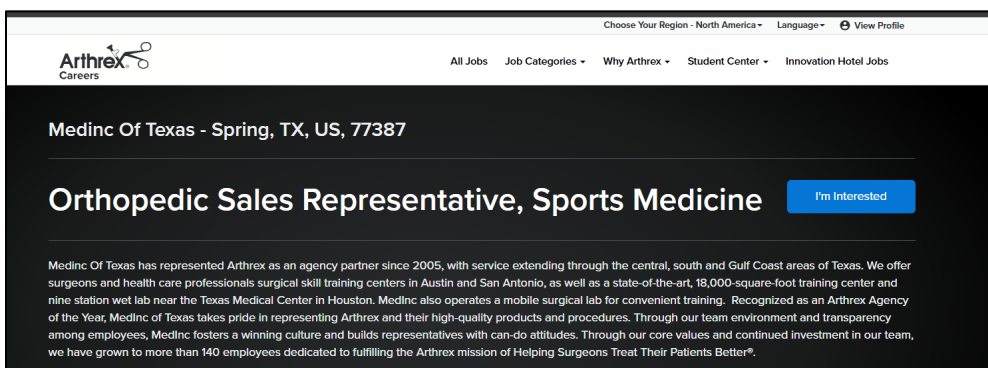
11. Pylant has offices in this District at least because it shares the office space with Arthrex located at 401 E Front Street, Ste 144, Tyler, Texas 75702, among other places in this District. Arthrex’s and Pylant’s employees work out of this location, and other locations in this District, to conduct Arthrex’s business.

12. Pylant is an agent of Arthrex and has been an agent of Arthrex since 2008. *See also* Ex. F (available at <https://pylantmedical.com/gb-restaurant-2-about/>):



13. MedInc has its main office at 1771 Crosspoint Avenue, Houston, Texas 77054. MedInc also has mobile labs that deliver educational experiences, including in this District, in at least, Beaumont, Texas. *See* Ex. G (available at <https://medincoftexas.com/general-6>).

14. MedInc is an agent of Arthrex and has been an agent of Arthrex since 2005. *See* Ex. H (available at <https://careers.arthrex.com/NorthAmerica/job/Spring-Orthopedic-Sales-Representative%2C-Sports-Medicine-TX-77387/1237289900/>):



15. MedInc states that it was “founded in 2005 with the core focuses of ‘People-First’ and representing Arthrex's World-Class products and procedures.” *See* Ex. I (<https://www.medincoftexas.com/about-1-1>):



**World-Class People & Products**

MedInc of Texas was founded in 2005 with the core focuses of "People-First" and representing Arthrex's World-Class products and procedures. Our services extended throughout Texas.

Recognized as Arthrex's "Agency of the Year" in 2015, MedInc of Texas takes pride in representing Arthrex with our outstanding leadership, especially our founder and, Bryan Osterhaus.



**Bryan Osterhaus**  
MedInc Founder & Owner

16. MedInc's website prominently displays Arthrex's logo together with a photo of Arthrex's President, Reinhold Schmieding, further confirming its status as Arthrex's agent for sales in this District. *See* Ex. I (<https://www.medincoftexas.com/about-1-1>):



Headquartered in Naples, Florida, with offices around the world, Arthrex is a medical device company constantly developing industry-leading orthopedic products and medical education. Striving to fulfill their mission to help surgeons treat their patients better and pioneering the field of arthroscopy, Arthrex has developed over 18,000 innovative products and surgical procedures with 1,000 more being produced every year.


\*Ranked for a second year in a row as one of the Top 100 Companies to Work for by Fortune Magazine, 94% of Arthrex products are designed and manufactured in America - creating high-tech jobs for Americans and producing products that are trusted.




**Reinhold Schmieding**  
Arthrex Founder & CEO







17. On information and belief, Arthrex controls and directs the day-to-day activities of Pylant's and MedInc's employees, with respect to Arthrex's business in this District, who reside in this District and whose work in this District concerns the promotion, education, encouragement, provision, and sale of orthopedic soft tissue repair devices, the sale and use of which infringe the Patents-in-Suit.

18. Arthrex refers to its exclusive distributors as "Agents," touts its "Agency Business Model" as setting it apart from its competitors, and states, "the Agency Network is a critical part of the Arthrex family." *See e.g.*, Ex. J (available at <https://www.arthrex.com/resources/VID1-01144-EN/arthrex-agency-model>).

19. Arthrex controls its agents and gives them detailed instructions on how to conduct sales and marketing for Arthrex's products. As acknowledged by Arthrex, Arthrex's agents "can only represent Arthrex, no other manufacturers" and Arthrex provides "unequaled financial, corporate, and marketing support" to its exclusive distributors. *See, e.g., id.*

20. On information and belief, Arthrex regulates the geographical territory of its exclusive distributors such that no distributor competes with any other distributor. Arthrex's website explains that Arthrex's agency model relies on having distributors that "represent the entire [Arthrex] product line." *See e.g.*, Ex. J (available at <https://www.arthrex.com/resources/VID1-01144-EN/arthrex-agency-model>). Arthrex's agents (i.e., "field personnel") "need to know over 150 different, unique procedures, which separates us from competitors." *Id.* Having the "field personnel" is important to Arthrex's business because "It allows [Arthrex and its agents] to be creative, it allows us to be independent, it allows us to think on our feet and react in real time to real situations." *Id.* ("We develop them [agents], we listen to them, we allow them to be a part of the decision-making process in the future of the company.").

21. Arthrex's website hosts "Company Profiles" of Pylant and MedInc, posts job openings for Pylant and MedInc, and lists job requirements for prospective employees of Pylant and MedInc. *See, e.g.*, Ex. H (available at <https://careers.arthrex.com/NorthAmerica/job/Spring-Orthopedic-Sales-Representative%2C-Sports-Medicine-TX-77387/1237289900/>); *see also* Ex. K (available at [https://www.simplyhired.com/job/W5yZEMZZWt\\_Bp8gkBfuG--fCDrP0HgYlniDn7EMcDqog6-rt8Lgx0g](https://www.simplyhired.com/job/W5yZEMZZWt_Bp8gkBfuG--fCDrP0HgYlniDn7EMcDqog6-rt8Lgx0g) (posting a job by Pylant Medical for sales of Arthrex products in Tyler, Texas)).

22. On information and belief, Arthrex requires employees of Pylant and MedInc to travel to Arthrex's headquarters to participate in rigorous, multi-day training on how to use and sell Arthrex's products before authorizing them to sell Arthrex's products in this District.

23. Arthrex's training program includes, among other things, an orientation of Arthrex's product offerings and covers how "to assist surgeons and staff in the use of [Arthrex's] products." *See* Ex. L (available at <https://goodesurgical.com/sales-training/>). These trainings are designed to teach the employees Arthrex's system for how to use and demonstrate the products to doctors, how the employees should prepare for surgeries, and how the employees should conduct themselves in the operating room during surgeries. *See e.g., id.* (GoodSurgical's website states "Arthrex believes that it is our responsibility to provide the most sophisticated medical device sales training programs in the industry. As a newly hired sales associate, you follow a detailed 18-month development plan that enables you to master more than 100 different surgical procedures while building trust with our surgeon customers")).

24. On information and belief, Arthrex exercises control over the selling price of products sold by Pylant and MedInc, and Pylant and MedInc cannot alter the price of any products during the sales process.

25. The sale and use of orthopedic soft tissue repair devices, including those that are alleged to infringe the Patents-in-Suit, are regulated by the United States Food and Drug Administration (“FDA”). As part of seeking approval for the use of its products in patients, Arthrex submits information to the FDA, including the specific design of the product and the medical indications for which it can be used. Arthrex maintains control over the design and acceptable indications for use of its orthopedic soft tissue repair devices and does not permit its exclusive distributors to modify its devices or offer its devices for improper, off-label indications as part of the selling process.

26. On information and belief, Arthrex employees frequently travel to Pylant and MedInc to host on-site trainings for employees of Pylant and MedInc, as well as accompany employees of Pylant and MedInc on sales calls to doctors and in the operating room to educate and direct the methods in which Pylant and MedInc sell Arthrex products, including the products alleged to infringe the Patents-in-Suit.

27. On information and belief, Arthrex retains ownership of its orthopedic soft tissue repair devices such as those alleged to infringe the Patents-in-Suit even after they are transferred to Pylant and MedInc. On information and belief, Arthrex retains the authority and control to demand that its surgical tools be recalled from Pylant and MedInc at any time and sent to Arthrex’s headquarters or another exclusive distributor.

28. On information and belief, upon the completion of a sale of orthopedic soft tissue repair devices, including those alleged to infringe the Patents-in-Suit, Pylant and MedInc are required to report to Arthrex the precise number of orthopedic soft tissue repair devices sold in order to be compensated for the sale.

29. Arthrex encourages and promotes Pylant and MedInc to use Arthrex’s trademarked



logo and imagery on its websites and on its physical offices. As a result, Arthrex holds itself out to customers that it has a physical place of business through which it conducts business in this District. *See e.g.*, Ex. M (available at <https://pylantmedical.com/gb-restaurant-2-contact/> (showing use of Arthrex’s trademarks on its website)):



*See e.g.*, Ex. N (available at <https://www.medincoftexas.com/> (showing use of Arthrex’s trademarks on its website)):



30. Pylant’s website discusses its relationship with Arthrex and refers to Arthrex’s products as “our products.” *See e.g.*, Ex. F (available at <https://pylantmedical.com/gb-restaurant-2-about/> (“Pylant Medical became the exclusive distributor in the North Texas Region for Arthrex in February of 2008. Pylant expanded its territory to include Oklahoma in 2012. . . . Pylant’s team

has grown substantially and now consists of over 225 highly specialized employees, who bring added value to the orthopedic industry and our communities. Our primary focus is on medical education and continued support to our physicians. We create better procedures with shorter rehabilitation, resulting in stronger outcomes for all of our patients. We have a continued dedication to *helping surgeons treat their patients better.*)” (emphasis in original)); Ex. O (available at <https://pylantmedical.com/203-2/> (“With Arthrex’s ever-growing product portfolio and continued product innovation, consisting of nine different categories and 14,000+ products, medical education is at the heart of what we do. We are committed to delivering uncompromising quality to the healthcare professionals who use our products, and ultimately, to the millions of patients whose lives we impact.”)).

31. MedInc’s website similarly discusses its relationship with Arthrex. MedInc states that in 2015, it was “[r]ecognized as Arthrex’s ‘**Agency of the Year**’”. See e.g., Ex. I (available at <https://www.medincoftexas.com/about-1-1> (emphasis in original)). MedInc further states that it “takes pride in representing Arthrex ...” and that its “services extended throughout Texas.” *Id.*

32. Venue is also proper in this District by the fact that Arthrex has consented to venue in this District in prior actions, including but not limited to *Smith & Nephew, Inc. v. Arthrex, Inc.*, No. 07-cv-00335-JRG-RSP, Dkt. 8 at ¶ 5 (E.D. Tex. Aug. 27, 2007). Arthrex has also sued others in this District. See e.g., *Arthrex, Inc. v. Smith & Nephew, Inc.*, No. 15-cv-01047-RSP (E.D. Tex.); *Arthrex, Inc. v. Smith & Nephew, Inc.*, No. 15-cv-01756-RSP (E.D. Tex.); *Arthrex, Inc. v. Smith & Nephew, Inc.*, No. 14-cv-00213-JRG; *Arthrex, Inc. v. Smith & Nephew, Inc.*, No. 16-cv-01041-RSP.

### **PATENTS-IN-SUIT**

33. Syntorr incorporates each of the above paragraphs by reference as though fully set forth herein.

34. Dr. Daniel L. Martin is an orthopedic surgeon and the founder and CEO of Syntorr. Dr. Martin founded Syntorr in 2009. He is also the inventor of several patents in the field of orthopedic surgery, including soft tissue suture and repair devices.

35. On November 11, 2014, the United States Patent and Trademark Office duly and legally issued U.S. Patent No. 8,881,635 (the “’635 Patent”), entitled “Variable Denier Yarn and Suture.” A true and correct copy of the ’635 Patent is attached as Exhibit A.

36. The ’635 Patent names Daniel L. Martin as the sole inventor.

37. Syntorr is the exclusive owner and assignee of all rights, title, and interest in the ’635 Patent, and has the right to bring this suit to recover damages for any current or past infringement of the ’635 Patent.

38. The ’635 Patent has not expired and is in full force and effect.

39. Pursuant to 35 U.S.C. § 282, the ’635 Patent and each of its claims are valid and enforceable.

40. The ’635 Patent is directed to novel variable denier sutures. For example, claim 1 of the ’635 Patent recites:

A suture, comprising: a first segment of suture comprising a plurality of first strands, the first segment having a substantially constant first denier; and a second segment of suture comprising a plurality of second strands, the second segment having a substantially constant second denier; wherein the first and second segments are aligned along a longitudinal axis of the suture; wherein there are more second strands in the second segment than first strands in the first segment such that the second denier is greater than the first denier; wherein a first portion of the plurality of second strands is made from a first plurality of yarn elements that extend through the first segment and the second segment, and wherein a second portion of the plurality of second strands is made from a second plurality of yarn elements that are present in the second segment and not the first segment, the first portion integrated around the second portion; and wherein ends of the second plurality of yarn elements are positioned along an axis that is oriented substantially transverse to the longitudinal axis.

41. The ’635 Patent is also directed to novel methods of suturing using a variable denier

suture. For example, claim 6 recites:

A method of suturing, comprising: threading a first segment of a suture through an opening of a surgical instrument, wherein the first segment comprises a plurality of first strands, the first segment having a substantially constant first denier; and pulling the suture through tissue to place a second segment of the suture against soft tissue, wherein the second segment comprises a plurality of second strands, the second segment having a substantially constant second denier; wherein the first and second segments are aligned along a longitudinal axis of the suture; wherein there are more second strands in the second segment than first strands in the first segment such that the second denier is greater than the first denier; and wherein a first portion of the plurality of second strands is made from a first plurality of yarn elements that extend through the first segment and the second segment, and wherein a second portion of the plurality of second strands is made from a second plurality of yarn elements that are present in the second segment and not the first segment, the first portion integrated around the second portion wherein ends of the second plurality of yarn elements are positioned along an axis that is oriented substantially transverse to the longitudinal axis.

42. On September 14, 2021, the United States Patent and Trademark Office duly and legally issued U.S. Patent No. 11,116,498 (the “’498 Patent”), entitled “Variable Denier Yarn and Suture.” A true and correct copy of the ’498 Patent is attached as Exhibit B.

43. The ’498 Patent names Daniel L. Martin as the sole inventor.

44. Syntorr is the owner and assignee of all right, title, and interest in the ’498 Patent, and has the right to bring this suit to recover damages for any current or past infringement of the ’498 Patent.

45. The ’498 Patent has not expired and is in full force and effect.

46. Pursuant to 35 U.S.C. § 282, the ’498 Patent and each of its claims are valid and enforceable.

47. The ’498 Patent is directed to methods of suturing. For example, claim 1 of the ’498 Patent recites:

A method of suturing, comprising: inserting a distal-most tip of a first end segment of a suture directly through a traction loop, wherein the first end segment comprises a plurality of first strands that extend to the distal-most tip, at least a portion of the first strands braided together in a first braid; folding the first end segment over on

itself to form a doubled first end segment, the doubled first end segment including the distal-most tip; pulling the traction loop and the doubled first end segment through an opening in a suture lock; continuing to pull the first end segment through the opening such that a second segment of the suture extends through the opening, wherein the second segment has a plurality of second strands, at least a portion of the second strands braided together in a second braid, wherein the second braid is tubular and continuous with the first braid to form a continuous suture braid along an outermost layer of the suture, wherein there are more second strands in the second segment than first strands in the first end segment such that the second segment has a greater denier than the first end segment, wherein there is a gradual change in denier from the first end segment to the second segment as the second segment is pulled into the opening, and further wherein a total denier of the doubled first end segment is less than the denier of the second segment such that a fit of the second segment in the opening is tighter than a fit of the doubled first end segment in the opening; and locking the suture in place with the second segment in the opening.

48. On August 1, 2023, the United States Patent and Trademark Office duly and legally issued U.S. Patent No. 11,712,241 (the “’241 Patent”), entitled “Variable Denier Yarn and Suture.”

A true and correct copy of the ’241 Patent is attached as Exhibit C.

49. The ’241 Patent names Daniel L. Martin as the sole inventor.

50. Syntorr is the owner and assignee of all right, title, and interest in the ’241 Patent, and has the right to bring this suit to recover damages for any current or past infringement of the ’241 Patent.

51. The ’241 Patent has not expired and is in full force and effect.

52. Pursuant to 35 U.S.C. § 282, the ’241 Patent and each of its claims are valid and enforceable.

53. The ’241 Patent is directed to multi-denier sutures. For example, claim 1 of the ’241 Patent recites:

A multi-denier suture for repair of soft tissue, comprising: a tubular braid structure comprising strands and configured to be inserted through an opening in a surgical instrument and pulled through soft tissue to suture the soft tissue, the tubular braid structure extending along a longitudinal axis and having a length, a first end and a second end, distal and proximal axial segments, and a middle axial segment comprising a transition zone positioned between the distal and proximal axial

segments; wherein the distal segment extends axially from the first end to the middle axial segment and has a first denier, the middle axial segment has a second denier greater than the first denier; and the proximal segment extends axially from the middle axial segment and has a third denier, wherein the third denier is greater than the second denier; and wherein (i) a first plurality of the strands extends the entire length of the tubular braid structure, (ii) the proximal axial segment comprises a second plurality of the strands braided together with a first portion of the first plurality of the strands, and (iii) respective distal ends of the second plurality of the strands terminate at the transition zone.

54. The '241 Patent is also directed to kits for the surgical repair of soft tissue. For example, claim 37 of the '241 Patent recites:

A kit for the surgical repair of soft tissue, comprising: a suture lock having an inner hole with a circumferential dimension; and a multi-denier suture configured to be pulled through the suture lock inner hole, the multi-denier suture having distal and proximal segments extending between first and second ends, and a transition zone, and comprising an outer braided tubular structure comprising a first plurality of strands, and having a first axial length extending along a longitudinal axis, and an inner braided tubular structure comprising a second plurality of strands extending along the longitudinal axis; wherein: (i) the inner braided tubular structure is radially enclosed within the outer braided tubular structure in the proximal segment, (ii) the distal segment extends distally beyond the distal end of the inner braided tubular structure, and (iii) the distal segment has a first denier, the proximal segment has a second denier, and the second denier is larger than the first denier.

55. On November 7, 2023, the United States Patent and Trademark Office duly and legally issued U.S. Patent No. 11,806,006 (the "'006 Patent"), entitled "Variable Denier Yarn and Suture." A true and correct copy of the '006 Patent is attached as Exhibit D.

56. The '006 Patent names Daniel L. Martin as the sole inventor.

57. Syntorr is the owner and assignee of all right, title, and interest in the '006 Patent, and has the right to bring this suit to recover damages for any current or past infringement of the '006 Patent.

58. The '006 Patent has not expired and is in full force and effect.

59. Pursuant to 35 U.S.C. § 282, the '006 Patent and each of its claims are valid and enforceable.

60. The '006 Patent is directed to systems for surgical repair. For example, claim 11 of the '006 Patent recites:

A system for surgical repair, comprising: a suture comprising: a first suture segment comprising a first plurality of strands braided together in a first braid; a second suture segment comprising a second plurality of strands braided together with the first plurality of strands in a second braid, wherein strands in the second suture segment are greater in number than strands in the first suture segment, and strands in the second braid are greater in number than strands in the first braid, and the first and second braids are a continuous braid comprising outer strands of the suture; an inner element having a shorter length than an entire suture length; a surgical implant having an opening, wherein the suture is configured to be pulled through the opening in the surgical implant; and a loop for pulling the first suture segment through the opening in the surgical implant.

61. The '006 Patent is also directed to sutures and surgical sutures. For example, claim 26 of the '006 Patent recites:

A surgical suture for suturing soft tissue comprising: a first suture segment having a first denier; a second suture segment having a second denier, wherein the second denier is at least two times greater than the first denier; and wherein the first suture segment and the second suture segment comprise a plurality of outer strands braided together in a braid, the braid extending a length of the suture, wherein strands of the suture terminate at the proximal end of the suture and at the distal end of the suture; wherein a portion of the plurality of outer strands terminate in a transition zone between the first suture segment and the second suture segment and wherein the surgical suture is configured to be inserted through an opening in a surgical instrument and pulled through the soft tissue to suture the soft tissue to be repaired.

62. On December 26, 2023, the United States Patent and Trademark Office duly and legally issued U.S. Patent No. 11,849,938 (the "'938 Patent"), entitled "Variable Denier Yarn and Suture." A true and correct copy of the '938 Patent is attached as Exhibit E.

63. The '938 Patent names Daniel L. Martin as the sole inventor.

64. Syntorr is the owner and assignee of all right, title, and interest in the '938 Patent, and has the right to bring this suit to recover damages for any current or past infringement of the '938 Patent.

65. The '938 Patent has not expired and is in full force and effect.

66. Pursuant to 35 U.S.C. § 282, the '938 Patent and each of its claims are valid and enforceable.

67. The '938 Patent is also directed to methods of suturing. For example, claim 1 of the '938 Patent recites:

A method of suturing, comprising: inserting a first end of a suture through a loop wherein the first end of the suture is a first end of a first segment of the suture, wherein the first segment comprises first strands that extend to the first end of the first segment, at least a portion of the first strands braided together in a first braid; folding the first segment over to form a doubled first segment, the doubled first segment including the first end of the suture; pulling the loop and the doubled first segment through an opening; and continuing to pull the first segment through the opening such that a second segment of the suture extends through the opening, wherein the second segment comprises second strands and the first strands, at least a portion of the second strands braided together with at least a portion of the first strands in a second braid, wherein the second braid is tubular and continuous with the first braid to form a continuous suture braid along an outermost layer of the suture, wherein there are more strands in the second segment than first strands in the first segment, wherein a second denier of the second segment has greater denier than a first denier of the first segment, and further wherein a total denier of the doubled first segment is less than the second denier of the second segment.

68. The Patents-in-Suit overcame problems in the field—for example, the Patents-in-Suit provide for sutures, systems for surgical repair, kits for the surgical repair of soft tissue, and method of suturing where a suture can both be folded over and pulled through an opening during looping of the suture while also providing a final suture with high stability and durability to avoid movement and loosening of the suture after completion of the surgical procedure.

In many surgical procedures, particularly minimally invasive surgical procedures such as endoscopic suturing of internal body tissue, suturing must be accomplished using a suture that can fit through a surgical instrument or implant having a very small opening. If the opening has a circular cross-section, for example, threading a suture having the same diameter as the opening can be nearly impossible. Moreover, many surgical procedures require looping the suture and pulling a doubled suture through the opening. As a result, most sutures have a smaller denier so as to easily fit through the intended opening and/or so as to be able to be folded over for proper threading by drawing a loop of suture through the opening.

...



Accordingly, there is a need for a suture having a larger denier at the central portion and a smaller denier near at least one end.

(*See e.g.*, Ex. A ('635 Patent) at 1:31-57).

69. Syntorr is not subject to the notice requirements of 35 U.S.C. § 287.

#### **ARTHREX AND ITS INFRINGING PRODUCTS**

70. Syntorr incorporates each of the above paragraphs by reference as though fully set forth herein.

71. Arthrex is a private company, founded in Munich Germany in 1981, by its President, Reinhold Schmieding. Ex. P (available at [https://careers.arthrex.com/content/Who-We-Are/?locale=en\\_US](https://careers.arthrex.com/content/Who-We-Are/?locale=en_US)).

72. Arthrex is a global medical devices manufacturer.

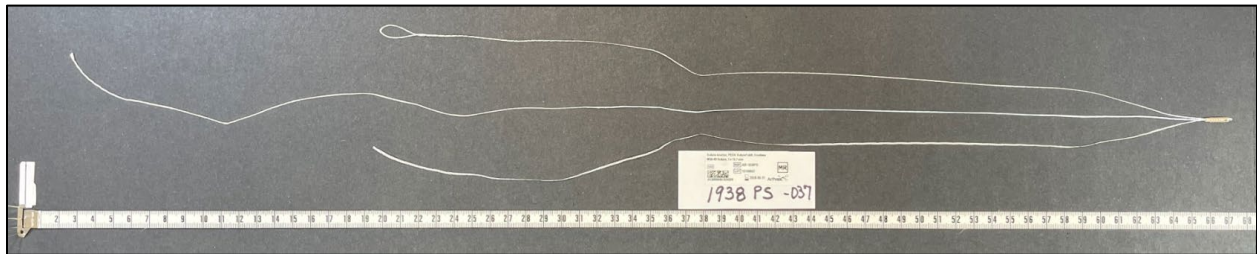
73. Arthrex purports to be a “leader in new product development and medical education in orthopedics.” Ex. Q (available at <https://www.arthrex.com/corporate/aboutus>).

74. Arthrex provides orthopedic soft tissue repair products and services, including a variety of suture anchor devices.

75. For example, Arthrex manufactures and sells, at least, the Arthrex 3 mm Knotless SutureTak<sup>®</sup> (“SutureTak<sup>®</sup>”), the Arthrex Knotless 1.8 FiberTak<sup>®</sup> (“FiberTak<sup>®</sup>”), Knotless Corkscrew Meniscal Root repair device, and the Arthrex Knotless SwiveLock<sup>®</sup> (“SwiveLock<sup>®</sup>”) anchor devices (collectively the “Accused Products”) that incorporate suture technology and methods that, among other things, rely on Syntorr’s patented variable denier suture technology.

76. Arthrex’s SutureTak<sup>®</sup> incorporates Syntorr’s variable denier suture anchor technology.

**Figure 1: Arthrex's SutureTak® product**

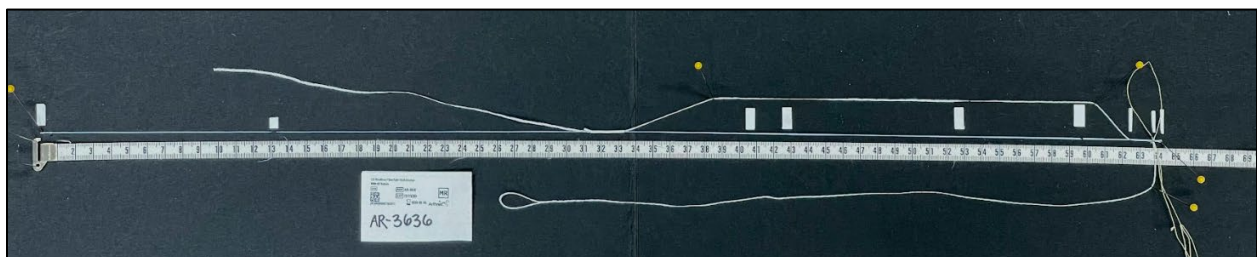


**Figure 2: Arthrex's SutureTak® product**

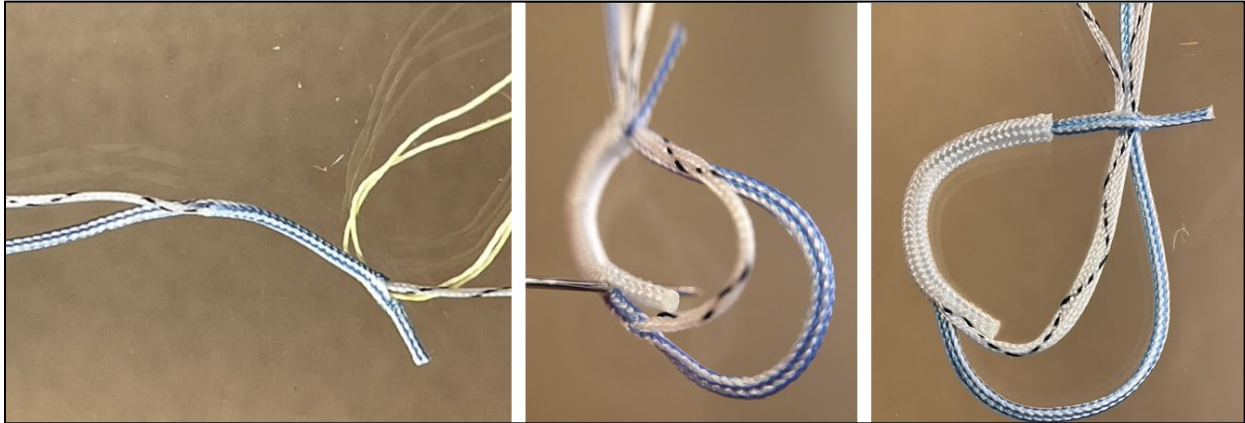


77. Arthrex's FiberTak® incorporates Syntorr's variable denier suture anchor technology.

**Figure 3: Arthrex's FiberTak® product**

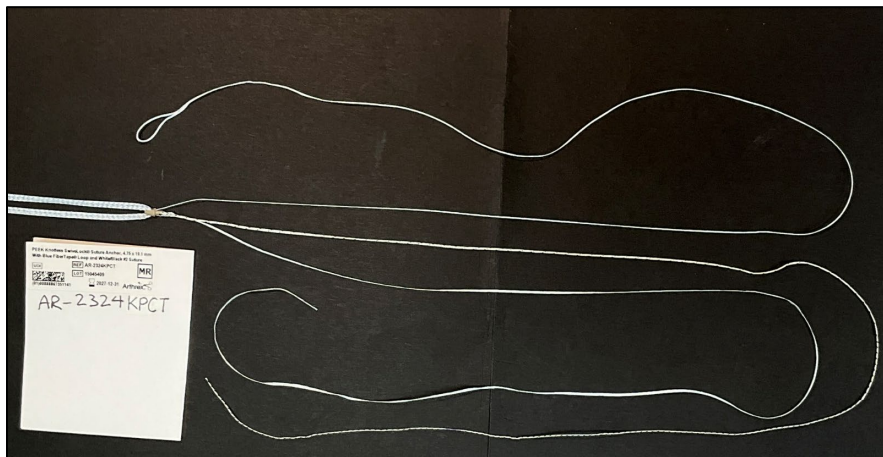


**Figure 4: Arthrex's FiberTak<sup>®</sup> product**



78. Arthrex's SwiveLock<sup>®</sup> incorporates Syntorr's variable denier suture anchor technology.

**Figure 5: Arthrex's SwiveLock<sup>®</sup> product**



**Figure 6: Arthrex's SwiveLock® product**



79. Arthrex advertises suture anchors on its website and in commercial brochures, and those suture anchors use variable denier suture technology. For example, a SutureTak® brochure entitled “Knotless SutureTak® Anchor for Instability Repair,” a FiberTak® brochure entitled “Knotless 1.8 FiberTak® Soft Anchor for Glenoid Labrum Repair,” and a SwiveLock® brochure entitled “SpeedBridge™ Knotless Rotator Cuff Repair,” each relies on the use of variable denier suture technology. Ex. R (SutureTak® Brochure); Ex. S (FiberTak® Brochure); Ex. T (SwiveLock® Brochure).

80. Syntorr’s variable denier technology, as covered by the Patents-in-Suit, has been incorporated into each of the Accused Products.

81. On information and belief, Arthrex relies on Syntorr’s patented variable denier technology as a material aspect of its business.

**ARTHREX’S KNOWLEDGE OF SYNTORR’S PATENTS AND PATENT RIGHTS**

82. Syntorr incorporates each of the above paragraphs by reference as though fully set

forth herein.

83. Soon after inventing the variable denier suture technology claimed by the Patents-in-Suit, Dr. Martin recognized the value and benefits his invention would have for both surgeons and patients around the world.

84. After filing his first patent applications relating to variable denier technology, Dr. Martin reached out to Arthrex with a desire to engage in discussions about commercializing his novel variable denier suture technology as early as March 2014.

85. In March 2014, Arthrex employee David Shepard met with Dr. Martin regarding Dr. Martin's variable denier technology at the World Veterinary Orthopaedic conference in Breckenridge, CO and at the American Academy of Orthopaedic Surgeons March 11-15, 2014 Annual Meeting in New Orleans, LA. Arthrex and Dr. Martin also engaged in further correspondence via email. Through these communications, Arthrex has had knowledge of Syntorr's variable denier suture technology, the technology in the Patents-in-Suit, and Syntorr's patent portfolio relating to its variable denier suture technology since at least March 2014.



**From:** Daniel Martin <[dmartin@syntorr.com](mailto:dmartin@syntorr.com)>  
**Subject:** Our meeting yesterday, suture  
**Date:** March 6, 2014 12:50:18 AM PST  
**To:** "David Shepard MBA, CTBS" <[David.shepard@arthrex.com](mailto:David.shepard@arthrex.com)>

David:

This is follow-up on our conversation yesterday morning in Breckenridge, regarding the variable width suture. We agreed that I would follow up with an email message.

I expressed interest in showing this suture to Arthrex, because Arthrex is very well positioned to market this product effectively and it complements your existing product line. You may recall that it lends itself well to continuous fully automated production, and is similar in form to the tapered end of FiberTape. Thin-to-thick denier change can be up to 1:5. It can be made as small as USP O, and as large as wanted. It can be made flat, but current product is round cross-section.

You suggested that you first discuss this matter with people back at corporate headquarters, and consider having a phone/video conference next week, prior to AAOS. I plan to attend AAOS, and I could discuss it further there. I will send an executive summary prior to a teleconference. I can provide samples if clear interest is expressed. This product is fully covered by IP, and no NDA is needed unless I provide samples. Please let me know how we can follow up.

A second product that may interest Arthrex is a minimally invasive retrograde intramedullary internal fixation device, principally for low-energy proximal humerus fractures. In our conversation, I explained that I used it to fix nearly all non-comminuted displaced common fragility fractures in my older patients. Of course, the non-displaced

fractures are even easier. This may be especially interesting to Arthrex, because your surgeons tend to be oriented to minimally invasive surgery, and the billing codes are the same as for plate-ORIF through the delto-pectoral interval. It is actually better than plate-ORIF when applied to osteoporotic bone, the majority of these patients. US and Euro patents filed. I could show this as well.

My background is in ME, working as engineer for AO/Synthes for two years prior to medical/orthopedic training and trauma fellowship. I recently left clinical practice to focus fully on device development.

I look forward to hearing how we should proceed.

best regards,

Dan Martin

Daniel L Martin, MD, ABOS  
Syntorr Inc.  
[dmartin@syntorr.com](mailto:dmartin@syntorr.com)

**From:** Daniel Martin [mailto:danleemartin@gmail.com]  
**Sent:** Monday, March 24, 2014 8:33 PM  
**To:** Dustin Libby; David Shepard; Tom Dooney  
**Subject:** AAOS meeting: variable width/denier suture, retrograde humeral ORIF

Dear David, Dustin and Tom:

This is a follow up on our meetings at AAOS regarding the Syntorr EZPass Suture and FBS Flexible Bone Screw for proximal humerus fractures. Included below is my initial letter with David Shepard after our meeting in Breckenridge CO.

In our discussion on EZPass, there was the question of what the EZPass suture can do that no other suture can do? The answer, as applied to arthroscopic technique, is fast knotless suturing without complex locking mechanisms. I am prepared to disclose these specific techniques under NDA. The available size range, denier-change-range, and transition gradient also give opportunities that I can discuss in more detail.

Tom and I discussed the possibility of doing an FBS cadaver lab out at Pacific Medical in Tracy, in association with one of your shoulder arthroscopy teaching labs. In fact, I have done the FBS operation only on live patients, and I cannot guarantee that the fracture pattern that we would generate will duplicate the typical pattern observed in older folks. The cadavers tend to be old people, so very likely the cadaver would work well. We would need a mini-c-arm to do it. I have a Fluoro Licence, in case that were an issue. We would also need a table-mounted crane for placing the affected extremity in skin-traction suspension, much like for arthroscopy.

I will look forward to hearing if you have continued interest in these two products.

with best regards,  
Dan Martin  
Daniel L Martin MD  
CEO Syntorr Inc.

**From:** Tom Dooney Thomas.Dooney@Arthrex.com  
**Subject:** RE: AAOS meeting: variable width/denier suture, retrograde humeral ORIF  
**Date:** March 25, 2014 at 2:04 PM  
**To:** Daniel Martin danleemartin@gmail.com, Dustin Libby Dustin.Libby@Arthrex.com, David Shepard David.Shepard@Arthrex.com

TD

Hi Dr. Martin

Nice to hear from you, I hope you enjoyed the AAOS meeting. I have reviewed the proximal humeral IM Pinning concept with our medical director and also several internal employees. While the concept is interesting and new, there are some concerns regarding the large diaphyseal holes that need to be drilled into the humerus to introduce the pins. The thought of a post-op mid-shaft fracture was of concern. Also the lack of control of the final location in which the pins would be positioned was also in question. I know you were very much in favor of this procedure and it was something I need to see firsthand, but we are not interested in pursuing this product any further.

We are still reviewing the suture concept but I wanted to get back to you as I will be out of the office the remainder of the week.

I appreciated the opportunity to discuss these ideas with you.

Regards,

Tom Dooney  
Senior Product Manager, Upper Extremity  
**Arthrex**  
Office: (239) 591-6935  
E-Mail: [tom.dooney@arthrex.com](mailto:tom.dooney@arthrex.com)

*"The one who says it cannot be done should never interrupt the one who is doing it."*

86. Arthrex has also had knowledge of the '635 Patent and Syntorr's growing patent portfolio relating to its variable denier technology since at least March 2014 through meetings and email communications between Arthrex and Dr. Martin.

87. The '635 Patent issued in November 2014. Shortly thereafter, Dr. Martin provided Arthrex with copies of the '635 Patent and the application giving rise to the '498 Patent which Arthrex, in turn, shared with its patent attorneys including Arthrex's then-Chief IP Counsel Trevor Arnold.

On Mar 30, 2015, at 05:34, Tom Dooney  
<[Thomas.Dooney@Arthrex.com](mailto:Thomas.Dooney@Arthrex.com)> wrote:

Hi Dr. Martin

Thank you for following up. I forwarded your email below to our Patent attorney.

We will be in touch to follow-up once we get a chance to review.

Thanks

---



Tom Dooney  
Senior Product Manager, Upper Extremity  
Arthrex  
Mobile: (239) 293-5378  
Office: (239) 591-6935 x1235  
E-Mail: [tom.dooney@arthrex.com](mailto:tom.dooney@arthrex.com)

-----Original Message-----

From: Daniel Martin [<mailto:danleemartin@gmail.com>]  
Sent: Friday, March 27, 2015 9:57 PM  
To: Tom Dooney  
Cc: David Shepard  
Subject: variable denier suture with improved intraoperative splice lock

Mr. Dooney:

Thank you for the chance to review my technology with you this afternoon. You said that you would like to review my variable denier suture with your patent counsel, so I have attached my issued patent and my recently published CIP.

Please let me know of your interest in my technology and intellectual property, and our overlapping IP. I will look forward t hearing from your

My suture does much more than form a good cinch lock, but I would have to disclose this under NDA. It would be great if we could form a collaborative relationship.

best regards,  
Daniel L. Martin MD

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88. Between March 2015 and March 2016, Dr. Martin continued to meet and engage in email correspondence with Arthrex, including Mr. Arnold, discussing the '635 Patent and Syntorr's growing patent portfolio relating to the variable denier suture technology, including the application giving rise to the '498 Patent.

89. Dr. Martin expressed his interest in the possibility of entering a collaborative relationship with Arthrex related to the variable denier technology and/or in licensing the '635 Patent and the patent portfolio relating to Syntorr's variable denier technology to Arthrex.

90. Dr. Martin continued discussions with Arthrex concerning the '635 Patent and the

patent application giving rise to the '498 Patent through 2016, at which time Arthrex abruptly refused to engage in further discussions.

91. While Syntorr has since continued to attempt to re-engage with Arthrex, including through a series of email correspondence and at least one phone call with Laurence Higgins, Arthrex's VP of Strategic Development, in 2022, Syntorr's efforts to re-engage Arthrex in patent discussions have largely been ignored by Arthrex.

92. For example, in July 2022, Dr. Martin followed-up with Arthrex, including Mr. Arnold, concerning his initial contact with David Shepard in 2014 and his prior visit with Arthrex in 2016, regarding his suture inventions. In these follow-up emails, Dr. Martin shared the significant progress Syntorr had made with its intellectual property, which had grown to "include[] eight (8) issued patents and pending applications, both EPO and USPTO, and in other foreign jurisdictions." Dr. Martin provided Arthrex with a list of Syntorr's intellectual property relevant to the suture inventions. On July 21, 2022, Ms. Donna Brown, the Executive Assistant to Reinhold Schmieding, confirmed Mr. Arnold's, and Arthrex's, receipt of Dr. Martin's emails:

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**From:** Donna Brown[Donna.Brown@Arthrex.com]  
**Sent:** Thur 7/21/2022 6:46:06 PM (UTC)  
**To:** Daniel Martin[dmartin@syntorr.com]  
**Subject:** RE: Variable denier suture, suture locking, prior correspondence.

Dr. Martin,

Thank you for providing your email. I reached out to Trevor and he confirmed he rec'd your email. I'm sure you will hear from him very soon. Tom Dooney is out of the office until July 26<sup>th</sup> so I will check with him when he returns.

Best regards,  
Donna Brown



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**Donna Brown**  
Executive Assistant

Telephone: (239) 591-6901

1370 Creekside Blvd

Toll-Free: (800) 933-7001

Naples, FL 34108

Fax: (239) 598-5521

E-Mail: Donna.Brown@Arthrex.com

**From:** Daniel Martin <[dmartin@syntorr.com](mailto:dmartin@syntorr.com)>  
**Sent:** Thursday, July 21, 2022 2:36 PM  
**To:** Donna Brown <[Donna.Brown@Arthrex.com](mailto:Donna.Brown@Arthrex.com)>  
**Subject:** Fwd: Variable denier suture, suture locking, prior correspondence.

Dear Ms.Donna Brown,

Thank you for your phone message yesterday, in response to my message to you yesterday.

This morning on the phone I explained to you that I had sent the email below to Trevor Arnold, and that I had not heard anything back. I thought maybe the message was not received, or perhaps it has been diverted to a low priority folder in the email system. You said you would gladly forward the email, to assure receipt.

My situation is evolving quickly. Additionally, I have new 2022 priority IP regarding a new high-tenacity (i.e. like FiberWire) suture design, that may be very interesting to Arthrex. This matter is at the core of Arthrex's business, and I am confident that a renewed dialog will be in our common interest.

If you can confirm that Trevor Arnold and other addressees are in receipt of my email, I will appreciate that very much. If Trevor Arnold and Tom Dooney are no longer the contact people for these matters, please inform me of who I should contact.

Note update (patent publication 7/14/2022) in email below.

Best regards,

Daniel L Martin, MD  
[dmartin@syntorr.com](mailto:dmartin@syntorr.com)  
M 650 867 0367

**From:** Daniel Martin <[dmartin@syntorr.com](mailto:dmartin@syntorr.com)>  
**Subject:** Variable denier suture, suture locking, prior correspondence.  
**Date:** July 14, 2022 at 12:20:08 PM PDT  
**To:** Trevor arnold <[Trevor.Arnold@Arthrex.com](mailto:Trevor.Arnold@Arthrex.com)>, Tom Dooney <[tom.dooney@arthrex.com](mailto:tom.dooney@arthrex.com)>, "David Shepard MBA, CTBS" <[David.shepard@arthrex.com](mailto:David.shepard@arthrex.com)>

Trevor,

I am following up my initial contact with David Shepard on March 5, 2014, my prior visit with you, Bill Benavitz and Tom Dooney in Naples in 2016 and at AAOS meetings, and associated emails, regarding my suture inventions.

I have made significant progress with my intellectual property and inventions since we last talked. My patent portfolio currently includes eight (8) issued patents and pending applications, both EPO and USPTO, and in other foreign jurisdictions. This includes both method and device claims. Priority extends back to 2011-2012. See list below. Highlights of the portfolio include three continuations filed in 2021 and 2022, including U.S. application serial number US20220008069A1 which has allowed claims regarding multi-denier suture structures that I believe will be foundational in the market. All IP is fully held by Syntorr Inc, and I remain the sole owner of Syntorr.

I have reviewed your impressive new variable denier suture braid configuration that lends itself better to automated production. I expect patients will greatly benefit from it, and I will appreciate the opportunity to consult with Arthrex regarding the continued development of this product. So, I am reaching out to re-open dialog with you about the possibilities. I have always admired the innovation and business savvy of Arthrex, and I would look forward to working with you.

I believe that my IP portfolio (particularly US20220008069A1, and US Serial Nos. 17/710,780, 17/710,619) can greatly benefit Arthrex in its efforts to strategically position itself in the market. I have another strategic party interested in this patent portfolio, but I think that Arthrex is a better fit for my IP and for my ongoing development efforts. So I would rather explore the possibilities with Arthrex before committing elsewhere, if there were an opportunity to do so.

Please let me know if there can be an opportunity to further consider a synergistic relationship.

Daniel L Martin, MD  
[dmartin@syntorr.com](mailto:dmartin@syntorr.com)  
M 650 867 0367

**List of relevant Syntorr IP:**

US8,881,635B2  
EP 2 670 898 B1  
Hong Kong Patent Application No. 42021043070.8  
EPO 20207816.8  
US11,116,498B2  
US20220008069A1 (US17/473,868)

US17/710,780 filed 3/31/2022, publication pending

US17/710,619 filed 3/31/2022, publication pending 7/14/2022,  
20220218341 **(Updated information))**

93. As explained above, Arthrex has long known of Syntorr's variable denier technology, the '635 Patent, and Syntorr's growing patent portfolio relating to its variable denier technology. Arthrex has also had express knowledge of the issuance of the '498 Patent and the applications giving rise to the '241, '006, and '938 Patents since at least July 2022. And Arthrex has had knowledge of the '241, '006, and '938 Patents since at least February 12, 2025.

94. Given the competitive landscape in which Arthrex operates, on information and belief, Arthrex has monitored the intellectual property other companies, including Syntorr, have

obtained in this space.

95. On information and belief, Arthrex has also known of the '635 Patent, the '498 Patent, the '241 Patent, the '006 Patent, and the '938 Patent through its efforts to keep apprised of its industry and/or the intellectual property associated with its industry.

96. Arthrex has affirmatively known about, or at the very least, been willfully blind to the existence of the Patents-in-Suit and their relation to Arthrex's use of variable denier technology in its own products as described herein.

### **CLAIMS FOR RELIEF**

#### **COUNT I: INFRINGEMENT OF U.S. PATENT NO. 8,881,635**

97. Syntorr incorporates each of the above paragraphs by reference as though fully set forth herein.

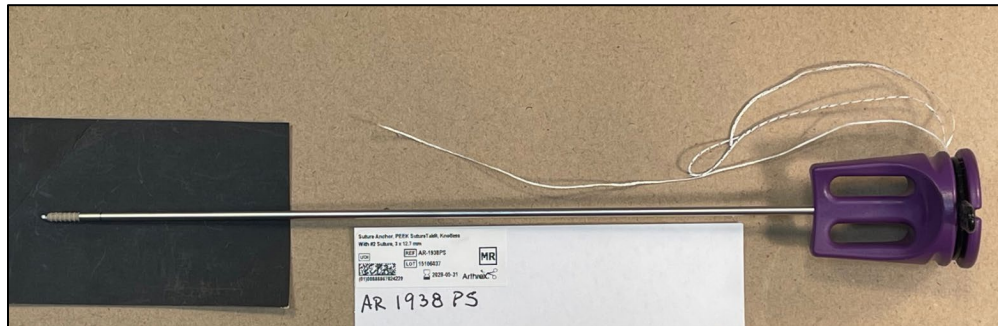
98. Arthrex has infringed, and continues to infringe, at least claims 1 and 6 of the '635 Patent under 35 U.S.C. §271(a), either literally and/or under the doctrine of equivalents, by making, using, selling, and/or offering for sale in the United States, and/or importing into the United States products and/or methods encompassed by those claims, including the Accused Products.

99. For example, each of Arthrex's Accused Products infringe exemplary claim 1 of the '635 Patent.

100. Each of the Accused Products is a suture anchor comprising at least one variable denier suture, as depicted below.

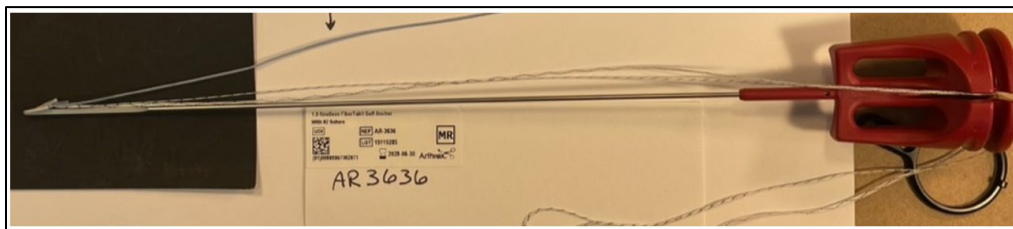
a. SutureTak<sup>®</sup>

**Figure 7: Arthrex's SutureTak<sup>®</sup> product**



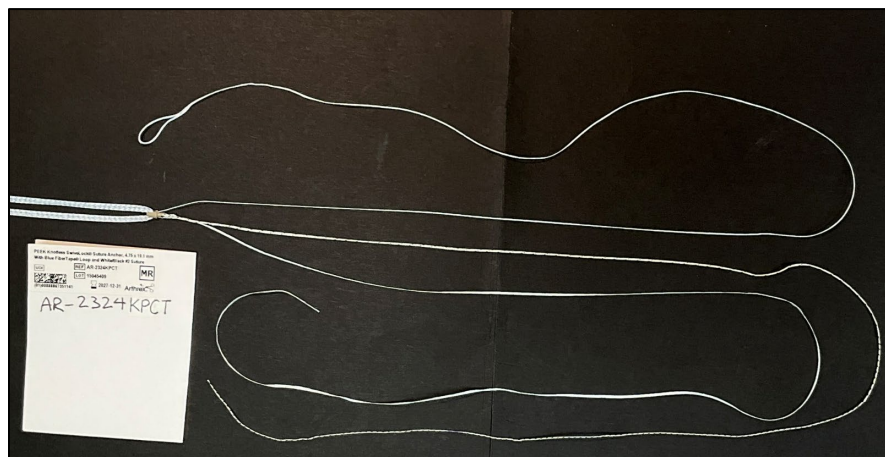
b. FiberTak<sup>®</sup>

**Figure 8: Arthrex's FiberTak<sup>®</sup> product**



c. SwiveLock<sup>®</sup>

**Figure 5: Arthrex's SwiveLock<sup>®</sup> product**



101. Each of the Accused Products has a first segment of suture comprising a plurality of first strands, the first segment having a substantially constant first denier.



102. Each of the Accused Products has a second segment of suture comprising a plurality of second strands, the second segment having a substantially constant second denier.

103. The first and second segments are aligned along a longitudinal axis of the suture in each of the Accused Products.

104. There are more second strands in the second segment than first strands in the first segment of each of the Accused Products such that the second denier is greater than the first denier.

105. A first portion of the plurality of second strands in each of the Accused Products is made from a first plurality of yarn elements that extend through the first segment and the second segment.

106. A second portion of the plurality of second strands of each of the Accused Products is made from a second plurality of yarn elements that are present in the second segment and not the first segment, the first portion integrated around the second portion.

107. Finally, ends of the second plurality of yarn elements of the Accused Products are positioned along an axis that is oriented substantially transverse to the longitudinal axis.

108. Arthrex has also induced infringement, and continues to induce infringement, of at least claim 6 of the '635 Patent under 35 U.S.C. § 271(b). Arthrex actively, knowingly, and intentionally induced, and continues to actively, knowingly, and intentionally induce, infringement of the '635 Patent by selling or otherwise supplying the Accused Products with the knowledge and intent that surgeons will use the Accused Products supplied by Arthrex to infringe the '635 Patent; and with the knowledge and intent to encourage and facilitate third-party infringement through the dissemination of the Accused Products and/or the creation and dissemination of promotional and marketing materials, supporting materials, instructions, product manuals, and/or technical information related to the Accused Products.



109. Arthrex specifically intended and was aware that the ordinary and customary use of the Accused Products would infringe the '635 Patent. For example, Arthrex sells and provides the Accused Products, which when used in their ordinary and customary manner intended and instructed by Arthrex, infringe one or more claims of the '635 Patent. Arthrex further provides manuals and other instructional materials that cause surgeons to use the Accused Products for their ordinary and customary use. These surgeons have directly infringed the '635 Patent, through the normal and customary use of the Accused Products. Arthrex accordingly has induced and continues to induce surgeons to use the Accused Products in their ordinary and customary way to infringe the '635 Patent, knowing, or at least being willfully blind to the fact, that such use constitutes infringement of the '635 Patent.

110. Arthrex has also contributed to the infringement by surgeons and continues to contribute to infringement by surgeons, of at least claim 6 of the '635 Patent under 35 U.S.C. § 271(c), by making, selling and/or offering for sale in the United States, and/or importing into the United States, the Accused Products, knowing that those products constitute a material part of the inventions of the '635 Patent, knowing that those products are especially made or adapted to infringe the '635 Patent, and knowing that those products are not staple articles of commerce suitable for substantial non-infringing use.

111. For example, the ordinary and customary use of Arthrex's Accused Products indirectly infringes exemplary claim 6 of the '635 Patent.

112. The ordinary and customary use of each of the Accused Products involves a method of suturing, comprising at least the steps of exemplary claim 6 of the '635 Patent.

113. Use of the Accused Products requires, at least, threading a first segment of a suture of the Accused Products through an opening of a surgical instrument.

114. The first segment of the suture of the Accused Products comprises a plurality of first strands, the first segment having a substantially constant first denier.

115. Use of the Accused Products further requires, at least, pulling the suture through tissue to place a second segment of the suture against soft tissue.

116. The Accused Products' second segment comprises a plurality of second strands, the second segment having a substantially constant second denier.

117. The first and second segments are aligned along a longitudinal axis of the suture of the Accused Products.

118. There are more second strands in the second segment than first strands in the first segment such that the second denier of the suture of the Accused Products is greater than the first denier.

119. A first portion of the plurality of second strands of the Accused Products is made from a first plurality of yarn elements that extend through the first segment and the second segment.

120. A second portion of the plurality of second strands of the Accused Products is made from a second plurality of yarn elements that are present in the second segment and not the first segment, the first portion integrated around the second portion.

121. Finally, ends of the second plurality of yarn elements of the Accused Products are positioned along an axis that is oriented substantially transverse to the longitudinal axis.

122. Arthrex has had knowledge and notice of the '635 Patent and its infringement since at least March 27, 2015, as evidenced by communications between Syntorr and Arthrex.

123. Arthrex's continued infringement after obtaining knowledge of the '635 Patent amounts to willful infringement.

124. Arthrex's conduct in infringing the '635 Patent also renders this case exceptional within the meaning of 35 U.S.C. § 285.

**COUNT II: INFRINGEMENT OF U.S. PATENT NO. 11,116,498**

125. Syntorr incorporates each of the above paragraphs by reference as though fully set forth herein.

126. Arthrex has infringed, and continues to infringe, at least, claim 1 of the '498 Patent under 35 U.S.C. §271(a), either literally and/or under the doctrine of equivalents, by making, using, selling, and/or offering for sale in the United States, and/or importing into the United States products and/or methods encompassed by those claims, including the Accused Products.

127. Arthrex has induced infringement, and continues to induce infringement, of at least claim 1 of the '498 Patent under 35 U.S.C. § 271(b). Arthrex actively, knowingly, and intentionally induced, and continues to actively, knowingly, and intentionally induce, infringement of the '498 Patent by selling or otherwise supplying the Accused Products with the knowledge and intent that surgeons will use the Accused Products supplied by Arthrex to infringe the '498 Patent; and with the knowledge and intent to encourage and facilitate third-party infringement through the dissemination of the Accused Products and/or the creation and dissemination of promotional and marketing materials, supporting materials, instructions, product manuals, and/or technical information related to the Accused Products.

128. Arthrex specifically intended and was aware that the ordinary and customary use of the Accused Products would infringe the '498 Patent. For example, Arthrex sells and provides the Accused Products, which when used in their ordinary and customary manner intended and instructed by Arthrex, infringe one or more claims of the '498 Patent. Arthrex further provides manuals and other instructional materials that cause surgeons to use the Accused Products for their ordinary and customary use. These surgeons have directly infringed the '498 Patent, through the

normal and customary use of the Accused Products. Arthrex accordingly has induced and continues to induce surgeons to use the Accused Products in their ordinary and customary way to infringe the '498 Patent, knowing, or at least being willfully blind to the fact, that such use constitutes infringement of the '498 Patent.

129. Arthrex has also contributed to the infringement by surgeons and continues to contribute to infringement by surgeons, of at least claim 1 of the '498 Patent under 35 U.S.C. § 271(c), by making, selling and/or offering for sale in the United States, and/or importing into the United States, the Accused Products, knowing that those products constitute a material part of the inventions of the '498 Patent, knowing that those products are especially made or adapted to infringe the '498 Patent, and knowing that those products are not staple articles of commerce suitable for substantial non-infringing use.

130. For example, the ordinary and customary use of Arthrex's Accused Products infringes exemplary claim 1 of the '498 Patent.

131. The ordinary and customary use of each of the Accused Products involves a method of suturing, comprising at least the steps of exemplary claim 1 of the '498 Patent.

132. Use of the Accused Products requires, at least, inserting a distal-most tip of a first end segment of a suture directly through a traction loop of the Accused Products.

133. The first end segment of the Accused Products comprises a plurality of first strands that extend to the distal-most tip, at least a portion of the first strands braided together in a first braid.

134. Use of the Accused Products further requires, at least, folding the first end segment over on itself to form a doubled first end segment, the doubled first end segment including the distal-most tip.

135. Use of the Accused Products further requires, at least, pulling the traction loop and the doubled first end segment through an opening in a suture lock.

136. Use of the Accused Products further requires, at least, continuing to pull the first end segment through the opening such that a second segment of the suture extends through the opening.

137. The Accused Products' second segment has a plurality of second strands, at least a portion of the second strands braided together in a second braid.

138. The second braid of the Accused Products is tubular and continuous with the first braid to form a continuous suture braid along an outermost layer of the suture.

139. There are more second strands in the second segment of the Accused Products than first strands in the first end segment such that the second segment has a greater denier than the first end segment.

140. There is a gradual change in denier from the first end segment to the second segment as the second segment of the Accused Products is pulled into the opening.

141. In the Accused Products, a total denier of the doubled first end segment is less than the denier of the second segment such that a fit of the second segment in the opening is tighter than a fit of the doubled first end segment in the opening.

142. Finally, use of the Accused Products further requires, at least, locking the suture in place with the second segment in the opening.

143. Arthrex has had knowledge and notice of the '498 Patent and its infringement since at least July 14, 2022, as evidenced by communications between Syntorr and Arthrex.

144. Arthrex's continued infringement after obtaining knowledge of the '498 Patent amounts to willful infringement.

145. Arthrex's conduct in infringing the '498 Patent also renders this case exceptional within the meaning of 35 U.S.C. § 285.

**COUNT III: INFRINGEMENT OF U.S. PATENT NO. 11,712,241**

146. Syntorr incorporates each of the above paragraphs by reference as though fully set forth herein.

147. Arthrex has infringed, and continues to infringe, at least, claims 1 and 37 of the '241 Patent under 35 U.S.C. §271(a), either literally and/or under the doctrine of equivalents, by making, using, selling, and/or offering for sale in the United States, and/or importing into the United States products and/or methods encompassed by those claims, including the Accused Products.

148. For example, each of Arthrex' Accused Products infringe exemplary claim 1 of the '241 Patent.

149. Each of the Accused Products are sutures anchors comprising at least one multi-denier (variable denier) suture for repair of soft tissue.

150. The Accused Products have a tubular braid structure comprising strands and configured to be inserted through an opening in a surgical instrument and pulled through soft tissue to suture the soft tissue.

151. The tubular braid structure of the Accused Products extends along a longitudinal axis and has a length, a first end and a second end, distal and proximal axial segments and a middle axial segment comprising a transition zone positioned between the distal and proximal axial segments.

152. The distal segment of the Accused Products extends axially from the first end to the middle axial segment and has a first denier.

153. The middle axial segment of the Accused Products has a second denier greater than

the first denier.

154. The proximal segment of the Accused Products extends axially from the middle axial segment and has a third denier.

155. The third denier of the Accused Products is greater than the second denier.

156. A first plurality of the strands of the Accused Products extends the entire length of the tubular braid structure.

157. The proximal axial segment of the Accused Products comprises a second plurality of the strands braided together with a first portion of the first plurality of the strands.

158. Finally, respective distal ends of the second plurality of the strands of the Accused Products terminate at the transition zone.

159. For example, Arthrex further provides the Accused Products in a kit for the surgical repair of soft tissue that infringe exemplary claim 37 of the '241 Patent.

160. Arthrex's kit includes, at least, a suture lock having an inner hole with a circumferential dimension and a multi-denier suture configured to be pulled through the suture lock inner hole.

161. The multi-denier suture of the Accused Products has distal and proximal segments extending between first and second ends.

162. The multi-denier suture of the Accused Products also has a transition zone.

163. The multi-denier suture of the Accused Products further comprises an outer braided tubular structure comprising a first plurality of strands, and having a first axial length extending along a longitudinal axis, and an inner braided tubular structure comprising a second plurality of strands extending along the longitudinal axis.

164. The inner braided tubular structure of the Accused Products is radially enclosed



within the outer braided tubular structure in the proximal segment.

165. The distal segment of the Accused Products extends distally beyond the distal end of the inner braided tubular structure.

166. Finally, the distal segment of the Accused Products has a first denier, the proximal segment has a second denier, and the second denier is larger than the first denier.

167. Arthrex has had knowledge and notice of the '241 Patent and its infringement since at least 2022 and February 12, 2025, as evidenced by communications between Syntorr and Arthrex.

168. Arthrex's continued infringement after obtaining knowledge of the '241 Patent amounts to willful infringement.

169. Arthrex's conduct in infringing the '241 Patent also renders this case exceptional within the meaning of 35 U.S.C. § 285.

**COUNT IV: INFRINGEMENT OF U.S. PATENT NO. 11,806,006**

170. Syntorr incorporates each of the above paragraphs by reference as though fully set forth herein.

171. Arthrex has infringed, and continues to infringe, at least, claims 11 and 26 of the '006 Patent under 35 U.S.C. §271(a), either literally and/or under the doctrine of equivalents, by making, using, selling, and/or offering for sale in the United States, and/or importing into the United States products and/or methods encompassed by those claims, including the Accused Products.

172. For example, each of Arthrex' Accused Products infringe exemplary claim 11 of the '006 Patent.

173. Each of the Accused Products are used in a system for surgical repair.

174. Each of the Accused Products are sutures anchors comprising at least one variable

denier suture.

175. Each of the Accused Products has a first suture segment comprising a first plurality of strands braided together in a first braid.

176. Each of the Accused Products has a second suture segment comprising a second plurality of strands braided together with the first plurality of strands in a second braid.

177. Strands in the second suture segment of the Accused Products are greater in number than strands in the first suture segment.

178. Strands in the second braid are greater in number than strands in the first braid.

179. The first and second braids of the Accused Products are a continuous braid comprising outer strands of the suture, an inner element having a shorter length than an entire suture length, and a surgical implant having an opening.

180. The suture of the Accused Products is configured to be pulled through the opening in the surgical implant.

181. Finally, the Accused Products also have, at least, a loop for pulling the first suture segment through the opening in the surgical implant.

182. For example, each of Arthrex's Accused Products also infringe exemplary claim 26 of the '006 Patent.

183. Each of the Accused Products are sutures anchors comprising at least one variable denier surgical suture for suturing soft tissue.

184. The Accused Products have a first suture segment having a first denier.

185. The Accused Products have a second suture segment having a second denier, wherein the second denier is at least two times greater than the first denier.

186. The first suture segment and the second suture segment of the Accused Products

comprise a plurality of outer strands braided together in a braid, the braid extending a length of the suture.

187. Strands of the suture of the Accused Products terminate at the proximal end of the suture and at the distal end of the suture.

188. A portion of the plurality of outer strands of the surgical suture of the Accused Products terminate in a transition zone between the first suture segment and the second suture segment.

189. Finally, the surgical suture of the Accused Products is configured to be inserted through an opening in a surgical instrument and pulled through the soft tissue to suture the soft tissue to be repaired.

190. Arthrex has had knowledge and notice of the '006 Patent and its infringement since at least 2022 and February 12, 2025, as evidenced by communications between Syntorr and Arthrex.

191. Arthrex's continued infringement after obtaining knowledge of the '006 Patent amounts to willful infringement.

192. Arthrex's conduct in infringing the '006 Patent also renders this case exceptional within the meaning of 35 U.S.C. § 285.

**COUNT V: INFRINGEMENT OF U.S. PATENT NO. 11,849,938**

193. Syntorr incorporates each of the above paragraphs by reference as though fully set forth herein.

194. Arthrex has infringed, and continues to infringe, at least, claim 1 of the '938 Patent under 35 U.S.C. §271(a), either literally and/or under the doctrine of equivalents, by making, using, selling, and/or offering for sale in the United States, and/or importing into the United States products and/or methods encompassed by those claims, including the Accused Products.

195. Arthrex has induced infringement, and continues to induce infringement, of at least claim 1 of the '938 Patent under 35 U.S.C. § 271(b). Arthrex actively, knowingly, and intentionally induced, and continues to actively, knowingly, and intentionally induce, infringement of the '938 Patent by selling or otherwise supplying the Accused Products with the knowledge and intent that surgeons will use the Accused Products supplied by Arthrex to infringe the '938 Patent; and with the knowledge and intent to encourage and facilitate third-party infringement through the dissemination of the Accused Products and/or the creation and dissemination of promotional and marketing materials, supporting materials, instructions, product manuals, and/or technical information related to the Accused Products.

196. Arthrex specifically intended and was aware that the ordinary and customary use of the Accused Products would infringe the '938 Patent. For example, Arthrex sells and provides the Accused Products, which when used in their ordinary and customary manner intended and instructed by Arthrex, infringe one or more claims of the '938 Patent. Arthrex further provides manuals and other instructional materials that cause surgeons to use the Accused Products for their ordinary and customary use. These surgeons have directly infringed the '938 Patent, through the normal and customary use of the Accused Products. Arthrex accordingly has induced and continues to induce surgeons to use the Accused Products in their ordinary and customary way to infringe the '938 Patent, knowing, or at least being willfully blind to the fact, that such use constitutes infringement of the '938 Patent.

197. Arthrex has also contributed to the infringement by surgeons and continues to contribute to infringement by surgeons, of at least claim 1 of the '938 Patent under 35 U.S.C. § 271(c), by making, selling and/or offering for sale in the United States, and/or importing into the United States, the Accused Products, knowing that those products constitute a material part of the

inventions of the '938 Patent, knowing that those products are especially made or adapted to infringe the '938 Patent, and knowing that those products are not staple articles of commerce suitable for substantial non-infringing use.

198. For example, the ordinary and customary use of Arthrex's Accused Products infringes exemplary claim 1 of the '938 Patent.

199. The ordinary and customary use of each of the Accused Products involves a method of suturing, comprising at least the steps of exemplary claim 1 of the '938 Patent.

200. Use of the Accused Products requires, at least, inserting a first end of a suture through a loop.

201. The first end of the suture of the Accused Products is a first end of a first segment of the suture, wherein the first segment comprises first strands that extend to the first end of the first segment, at least a portion of the first strands braided together in a first braid.

202. Use of the Accused Products further requires, at least, folding the first segment over to form a doubled first segment, the doubled first segment including the first end of the suture.

203. Use of the Accused Products further requires, at least, pulling the loop and the doubled first segment through an opening.

204. Use of the Accused Products further requires, at least, continuing to pull the first segment through the opening such that a second segment of the suture extends through the opening.

205. The Accused Products' second segment comprises second strands and the first strands, at least a portion of the second strands braided together with at least a portion of the first strands in a second braid.

206. The second braid of the Accused Products is tubular and continuous with the first braid to form a continuous suture braid along an outermost layer of the suture.

207. There are more strands in the second segment than first strands in the first segment of the Accused Products, wherein a second denier of the second segment has a greater denier than a first denier of the first segment.

208. Finally, a total denier of the doubled first segment of the Accused Products is less than the second denier of the second segment.

209. Arthrex has had knowledge and notice of the '938 Patent and its infringement since at least 2022 and February 12, 2025, as evidenced by communications between Syntorr and Arthrex.

210. Arthrex's continued infringement after obtaining knowledge of the '938 Patent amounts to willful infringement.

211. Arthrex's conduct in infringing the '938 Patent also renders this case exceptional within the meaning of 35 U.S.C. § 285.

### **JURY DEMAND**

Syntorr respectfully requests a trial by jury of all issues so triable.

### **PRAYER FOR RELIEF**

Syntorr respectfully requests that the Court enter judgment in its favor and grant the following relief:

A. Enter judgment that Arthrex has infringed and is infringing the Asserted Syntorr Patents directly under 35 U.S.C. § 271(a), and literally and/or under the doctrine of equivalents.

B. Enter judgment that Arthrex has induced and is inducing the infringement of the Asserted Syntorr Patents and/or has contributed and is contributing to the infringement of the Asserted Syntorr Patents pursuant to 35 U.S.C. § 271(b) and/or § 271(c).

C. Award Syntorr damages in an amount sufficient to compensate for Arthrex's infringement of the Asserted Syntorr Patents.

- D. Enter judgment that Arthrex's infringement is willful.
- E. An award for a trebling of damages and/or exemplary damages pursuant to 35 U.S.C. § 284 as a result of Arthrex's willful and deliberate acts of infringement.
- F. Enter an order adjudging that this is an exceptional case.
- G. Award Syntorr its attorney's fees and its and costs and expenses incurred in connection with this action pursuant to 35 U.S.C. § 285.
- H. Award Syntorr pre-judgment and post-judgment costs and all other remedies in this action in accordance with 35 U.S.C. § 284.
- I. Award Syntorr an accounting for acts of infringement not presented at trial and an award by the Court of additional damages for any such acts of infringement.
- J. Award Syntorr such other further relief as the Court deems just and proper.



Dated: February 13, 2025

Respectfully submitted,

By: /s/ Syed K. Fareed by permission Andrea L. Fair

Syed K. Fareed  
Texas Bar No. 24065216  
Kyle Sorenson  
Texas Bar No. 24125418  
Christian Tatum  
Texas Bar No. 24125429  
**MCDERMOTT, WILL & EMERY L.L.P.**  
300 Colorado Street, Suite 2200  
Austin, TX 78701  
Telephone: (512) 726-2600  
Facsimile: (512) 532-0002  
sfareed@mwe.com  
ksorenson@mwe.com  
ctatum@mwe.com

Sarah Chapin Columbia (*pro hac vice*  
forthcoming)  
Massachusetts Bar No. 550155  
**MCDERMOTT, WILL & EMERY L.L.P.**  
200 Clarendon Street, Floor 58  
Boston, MA 02116  
Telephone: (617) 535-4000  
Facsimile: (617) 535-3800  
scolumbia@mwe.com

*Of Counsel:*  
Andrea L. Fair  
Texas Bar No. 24078488  
Claire A. Henry  
Texas Bar No. 24053063  
**MILLER FAIR HENRY PLLC**  
1507 Bill Owens Parkway  
Longview, Texas 75604  
Telephone: (903) 757-6400  
Facsimile: (903) 757-2323  
andrea@millerfairhenry.com  
claire@millerfairhenry.com

**ATTORNEYS FOR PLAINTIFF  
SYNTORR, INC.**